

**PROSPECTIVE RANDOMISED COMPARATIVE STUDY OF
EFFICACY OF COMBINATION OF TRANEXAMIC ACID AND
ETHAMSYLATE BY ORAL AND INTRAVENOUS ROUTES IN RELATION
TO CONTROL OF BLEEDING IN CARDIAC SURGERIES.**

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BACKGROUND:

Bleeding after cardiac surgery is a major complication that affects 18% of patients undergoing cardiac surgery. Subsequent transfusion of blood and blood products puts the patient at risk for transfusion reactions and transfusion acquired infections. The mechanism of bleeding is subclinical induction of fibrinolysis and platelet receptor damage. These changes are induced by activation of factor XII caused by contact with CPB circuit, initiating systemic inflammatory response involving coagulation cascade, fibrinolysis and compliment activation. Also, hypothermia during CPB causes reversible platelet membrane dysfunction, inhibition of coagulation factors and disordered fibrinolysis. The anti-fibrinolytic tranexamic acid and platelet stabilising ethamsylate when used in combination helps reduce post op bleeding. This study aims at comparing the efficacy of oral versus intravenous combination of the above said drugs in controlling blood loss.

AIM:

To know the effect of tranexamic acid in reducing intra operative and postoperative blood loss in patients undergoing cardiac valve replacement surgeries.

The secondary purpose of the study is

1. To know the requirement of transfusion intra operatively and postoperatively.
2. To study the effect of drug on haematocrit change after surgery.
3. To compare the cost effectiveness of the 2 groups.

METHODOLOGY:

A prospective randomised case control study of 60 patients undergoing cardiac valve replacement surgeries done under general anaesthesia was chosen and randomly allocated into the 2 groups after assessing for inclusion and exclusion criteria after obtaining written informed consent. This study was done from June 2017 to December 2017. All patients were subjected to similar induction and maintenance of anaesthesia. Preoperative, Intraoperative and Postoperative hemoglobin, coagulation profile, blood loss were taken note of up to 24 hours. All the results were analysed and a database generated.

RESULTS:

Intraoperatively, Oral group needed transfusions required roughly 1 unit of blood product more than intravenous group. And When duration >5 hours, all the subjects in oral group compared to one-third of the subjects in IV group required blood transfusion. Post operatively, in duration >5 hours showed 89% subjects in oral group requiring blood transfusion compared to 11% of the subjects in IV group.

CONCLUSION:

Both intravenous and oral formulations of the combination were equally efficacious in controlling blood loss and decreasing the transfusion requirements in patients undergoing cardiopulmonary bypass, provided the duration of the surgery is within the plasma half-life of the drugs. In case of exceeding the plasma half-life, additional doses or adopting methods like cell salvage methods may help reduce the blood loss and transfusions. Oral formulation is found to be cost effective than intravenous formulation.

KEYWORDS-

Cardiac surgeries, Cardiopulmonary bypass, Ethamsylate, Tranexamic acid, Blood loss.